

**AGENDA ITEM #7**  
September 12, 2003

To: Delta Protection Commission  
From: Lori Clamurro, Delta Protection Commission Staff  
Subject: California Bay-Delta Authority (CBDA, formerly CALFED) Ecosystem Restoration Projects Tracking Memo

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Since 1996, restoration projects aimed at improving the quality of the Delta environment have been funded. The specific purpose is to implement "non-flow" related actions, also called Category III projects, to restore and enhance habitat and species populations. The term Category III comes from the State Water Resources Control Board's adopted Water Quality Control Plan for the Bay-Delta, and Category III measures are included as part of the Bay-Delta Accord of 1994. As part of this agreement, funding for Category III projects has been provided by water users such as California Urban Water Agencies (CUWA), by the Central Valley Project Improvement Act (CVPIA), and by Proposition 204 (State share) and federal appropriations.

The Category III program, implemented as part of "early implementation actions" under the CBDA, officially ended with the certification of CBDA's Record of Decision (ROD) in late August 2000. The program has been proceeding with annual solicitations for ecosystem restoration projects (as well as projects to be implemented under the other CBDA program elements), with State and federal appropriations.

There has not been a CBDA-issued proposal solicitation for ecosystem restoration projects since August 2001. At that time, several proposals were approved for funding in FY 02-03, and some proponents were invited to resubmit their proposals in January 2002 for consideration as Directed Actions for FY 03-04.

This updated memo lists the proposals that have been approved under the auspices of the CBDA's Bay-Delta Program to date, including proposals that were approved during the 2001 solicitation and the Directed Actions that were approved by CBDA in August 2003. New information and updates are in **bold** text.

**Note:** Updated information is incomplete, because CBDA is currently in the process of updating its project tracking system, and a status update on its projects has not been issued in over two years. Complete information on the status of all of these projects will be available when CBDA has its new project tracking system in place.

### CUWA – September 1996 Solicitation

| <u>TITLE</u>  | <u>APPLICANT(S)</u>             | <u>DESCRIPTION</u>   | <u>FUNDING</u> | <u>STATUS</u>  |
|---|---------------------------------|--|----------------|--|
| Sherman Island Levee Habitat Demonstration Project  | DWR<br>RD 341                   | Construct 2.5-acre in-channel island using dredge material stored on Sherman Island.   | \$960,000      | Design completed.<br><b>Funding terminated (2002).</b>   |
| Predicting the Evolution of Ecological Functions from Restoration of Diked Wetlands in the Delta                          | University of Washington        | Two-year study will compare both naturally- and artificially-breached diked wetland sites to evaluate the rate, pattern, and long-term success of breached-dike restoration (as compared to natural marsh sites).  | \$575,172      | Additional \$100,172 to increase field work and include an element for bird habitat. Project 93% complete.   |
| Yolo Bypass Habitat Restoration Study [ERP-96-M13]  | DWR                             | Study to provide data and technical recommendations on Bypass modifications, due to strong evidence of mortality to salmon and other species from stranding.   | \$226,000      | <u>Project is complete.</u> Final report pending.  |
| Decker Island Tidal Wetland Enhancement Pilot Project   | Port of Sacramento              | Establish 35-40 acres of tidal wetland on Decker Island, and improve habitat on the remainder of the 70-acre site.   | \$399,000      | <u>Funding terminated.</u>   |
| Inventory of Rearing Habitat for Juvenile Salmon in the North Delta and Lower Sacramento and Cosumnes Rivers [ERP-96-M27] | CSU Sacramento                  | Conduct a survey of rearing habitat for juvenile salmon in the North Delta.  | \$24,500       | <u>Project complete</u> Nov-99. Final report available.  |
| Prospect Island Habitat Restoration Project   | Corps of Engineers<br>DWR       | Purchase Prospect Island and restore 1,300 acres of shallow water, tidal wetland, and aquatic habitat. (The \$2.5 million in Category III funds consists of \$1.25 million for construction of the project and \$1.25 for long-term operations and maintenance.) | \$2,500,000    | Revised environmental document circulated in 2000.<br><b>Project on hold; USBR may divest itself of the property due to unanticipated project costs and delays (9/03).</b> |
| Prospect Island Monitoring Plan   | DWR                             | Develop post-project monitoring plan for the Prospect Island project.  | \$35,000       | <u>Project is complete.</u>  |
| Introduction of Non-Indigenous Aquatic Species Research Program   | San Francisco Estuary Institute | Develop regional monitoring program to provide early warning for eradication. Public outreach on ballast water invasions. Examine post-invasion control mechanisms.  | \$197,000      | <u>Project is complete.</u>  |
| Cosumnes River Preserve Acquisition   | The Nature Conservancy          | Acquire 4,356-acre Valensin Ranch property.  | \$12,000,000   | <u>Project is complete.</u><br>Property acquired Dec-96.   |

### CALFED – July 1997 Solicitation

| <u>TITLE</u>  | <u>APPLICANT(S)</u>                         | <u>DESCRIPTION</u>   | <u>FUNDING</u> | <u>STATUS</u>  |
|---|---|--|----------------|--|
| Hastings Tract Fish Screen Feasibility Study [ERP-97-M06]                               | Hastings Island Land Company                | Feasibility Report on the installation of fish screens on gravity intake pipes and the relocation of the pipes from Cache Slough to Lindsey Slough.  | \$27,000       | Final contract pending approval by applicant.  |
| Monitoring of Delta Contaminants [ERP-97-N09]   | DeltaKeeper                                 | One-year pilot study to establish baseline toxicity data at 12-14 sites throughout the Delta and east-side tributaries.  | \$100,000      | Contract signed Sept-98. Project underway.   |
| Effects of Wetlands Restoration on Methyl Mercury Production [ERP-97-C05]               | U.C. Davis                                  | Yield baseline data quantifying the levels of methyl mercury production from diked and reflooded wetlands.   | \$546,171      | Contract signed Sept-98. Project underway; first year summary report complete.                     |
| Sedimentation Movement and Availability in the Delta [ERP-97-B02]                       | U.S. Geological Survey                      | Monitor sediment transport at several sites to describe the movement of the sediment needed for habitat restoration.   | \$1,047,010    | Project underway. Contract extended to June 30, 2001.  |
| Contaminant Effects on Smelt [ERP-97-CO6]   | U.C. Davis                                  | Two-year study will evaluate contaminant effects on smelt by quantifying the overall health, condition, and growth rate of smelt collected from various sites.   | \$437,236      | Contract signed Nov-98. Project underway.  |
| Jepson Prairie Preserve Restoration   | Solano County Farmlands and Open Space Fdn. | Three-year program will restore shaded riverine aquatic habitat along portions of Barker Slough and Calhoun Cut, restore perennial grasslands, and design a habitat corridor connecting the Preserve to Prospect Island.                   | \$244,801      | <u>Project is complete.</u> Final report available.  |
| Demonstration Project for Protection and Enhancement of In-Channel Islands [ERP-97-N11] | Association of Bay Area Governmts.          | First phase (design) funded. Design four small restoration areas (Little Tinsley Island and Webb Tract Islands).   | \$270,270      | <u>Design is complete.</u> Phase II funding approved Jan-01 (see pg. 11).                          |
| Liberty Island Acquisition [ERP-97-B03]   | Trust for Public Land (for USFWS)           | Acquire 4,750-acre Liberty Island.   | \$8,926,000    | <u>Project is complete.</u> Property acquired Sept-99.   |
| Franks Tract Recreation Area Wetlands Habitat Enhancement                               | Moffat & Nichol Engineers<br>DPR<br>DWR     | First phase (design and environmental documentation) funded. Design four demonstration islands along Piper Slough to restore 45 acres of perennial aquatic habitat, shaded riverine aquatic habitat, and channel island and shoal habitat. | \$231,500      | Initial Neg Dec circulated 6/99.<br><b>Project on hold (see pg. 11, Feasibility Study). (9/03)</b> |

**CALFED – July 1997 Solicitation, cont.**

| <u>TITLE</u>   | <u>APPLICANT(S)</u>                                | <u>DESCRIPTION</u>   | <u>FUNDING</u> | <u>STATUS</u>   |
|--|--|--|----------------|---|
| Tyler Island Levee Protection and Habitat Restoration Pilot Project  | Habitat Assessmt. & Restoration Team, Inc.         | Create/enhance shaded riverine aquatic and tidal perennial aquatic habitat along 2,000 feet of Georgiana Slough and along 3,000 feet of the North Fork of the Mokelumne River. | \$885,202      | <u>Project is complete.</u>   |
| Cosumnes River Preserve Start-Up Stewardship and Restoration (see “Cosumnes Floodplain Acquisition and Restoration” [pg. 3]) | The Nature Conservancy Wildlife Conservation Board | Conduct baseline monitoring of vegetation, wildlife, avian, and fish resources.  | \$1,975,100    | <u>Project is complete.</u>   |
| Mokelumne River Setback Levee and Habitat Restoration  | RD 2110  | Construct a 3.4-mile levee set back approximately 400 feet from the existing levee.  | \$365,000      | <u>Funding terminated</u> (TNC has purchased McCormack-Williamson Tract.) |

**CALFED – September 1997 Solicitation**

| <u>TITLE</u>   | <u>APPLICANT(S)</u>  | <u>DESCRIPTION</u>   | <u>FUNDING</u> | <u>STATUS</u>   |
|--|--|--|----------------|---|
| Assessing Impacts of Selenium on Restoration of the Bay-Delta [ERP-98-B07] | U.S. Geological Survey   | Three-year study evaluating selenium in the Bay-Delta to develop models useful for selenium management.  | \$1,627,117    | Contract signed Aug-98. Amendment for \$38,117 approved 7/99. |
| Cache Slough Shaded Riverine Aquatic Habitat Enhancement [ERP-98-B08]      | RD 2060  | First phase (design) funded. Design restoration for 2,000 feet of levee bank where erosion has removed shaded riverine aquatic habitat.  | \$85,000       | Contract signed Jun-98. Topographic survey completed.         |
| Twitchell Island Subsidence Study  | DWR<br>USGS<br>Nat. Heritage Inst.<br>NW Hydraulic Consultants, Inc.<br>Philip Williams & Associates, Ltd. | First phase funded. Design and construct three large restoration pilot projects, totaling 600 acres, on Twitchell Island. Develop technical design recommendations for a restoration program to raise the surface level of subsided Delta islands. | \$3,583,000    | Contract signed May-99. Project underway.                     |
| Culture of Delta Smelt [ERP-98-C02]  | U.C. Davis   | Establish a functional culture system to provide smelt embryos, larvae, juveniles, and adults for laboratory testing.  | \$194,870      | <u>Project is complete.</u> Final report completed.           |
| Cosumnes Floodplain Acquisition and Restoration [ERP-98-B17]               | The Nature Conservancy   | Acquisition of fee or easement interests on three properties (totaling 2,195 acres) contiguous to the Cosumnes River Preserve.   | \$3,500,000    | <u>Project is complete.</u> Properties acquired Dec-98.       |

**CALFED – September 1997 Solicitation, cont.**

| <b><u>TITLE</u></b>  | <b><u>APPLICANT(S)</u></b>       | <b><u>DESCRIPTION</u></b>   | <b><u>FUNDING</u></b> | <b><u>STATUS</u></b>   |
|--|----------------------------------|---|-----------------------|--|
| Delta Dredging Reuse Strategy<br>(Designated Action)<br>[ERP-98-C09]                 | CDFG<br>RWQCB 5<br>DPC           | Develop criteria for the Central Valley Regional Water Quality Control Board to permit reuse of material dredged in the Delta.  | \$500,000             | <u>Project is complete.</u> Final report available.                          |
| Adult Fall-Run Chinook Salmon in the Lower San Joaquin River and South Delta         | CDFG                             | Monitor upstream movement of fall-run salmon in the lower San Joaquin River and South Delta. Determine whether the installation of three temporary barriers at the head of Old River or low dissolved oxygen content significantly impede upstream migration. | \$285,000             | Contract signed Jun-99. Field work nearly complete; data analysis beginning. |
| Cosumnes River Salmonid Barrier Program<br>[ERP-98-B25]                              | Fishery Foundation of California | Install fish passage structures at two summer dams in the lower Cosumnes River. Upgrade fish ladders at Granlees Dam to current CDFG hydraulic specifications.  | \$188,255             | Contract signed Mar-99. Permits obtained. Construction started Aug-00.       |
| Hastings Tract Fish Screen, Phase II: Construction<br>[ERP-98-B27]                   | Hastings Island Land Company     | Place fish screens on gravity intake pipes, and relocate the pipes from Cache Slough to Lindsey Slough.   | \$271,250             | Agreement awarded. Start date Jan-01.  |
| Rhode Island Floodplain Management and Habitat Restoration<br>[ERP-98-F09]           | CDFG                             | First phase (survey) funded. Survey conditions to determine specific improvement needs. Plan to improve fish and wildlife carrying capacity on the 67-acre island by increasing the width, height, and stability of the island's breached levees.             | \$25,000              | <u>Project design is complete.</u>   |
| Stone Lakes National Wildlife Refuge Acquisitions                                    | USFWS                            | Acquire fee title interest in 500-acre property.  | \$2,400,000           | <u>Project is complete.</u> Property acquired Jul-00.                        |
| Fern-Headreach Tidal Perennial Aquatic and Shaded River Aquatic Conservation Project | Thomas Luckey                    | Exercise purchase option on the Fern-Headreach Island Complex, and commit the entire 168-acre complex to shallow water habitat (140 acres) and shaded riverine aquatic habitat (28 acres).  | \$425,000             | <u>Project is complete.</u>  |
| Cosumnes River Acquisition, Restoration Planning, and Demonstration [ERP-98-F19]     | TNC<br>BLM<br>WCB                | Acquire fee title interest in a 300-acre property contiguous to the Cosumnes River Preserve.  | \$750,000             | Contract signed May-99. Appraisal and contaminants survey complete.          |
| Biological Assessment of Green Sturgeon in the Sacramento-San Joaquin Watershed      | U.C. Davis<br>CDFG               | Two-year study to determine baseline information regarding the green sturgeon's biological requirements in the watershed.   | \$241,000             | Contract signed Mar-99. Project underway.                                    |

**CALFED – September 1997 Solicitation, cont.**

| <u><b>TITLE</b></u>  | <u><b>APPLICANT(S)</b></u>                       | <u><b>DESCRIPTION</b></u>  | <u><b>FUNDING</b></u> | <u><b>STATUS</b></u>  |
|--|--|--|-----------------------|---|
| Watershed Restoration Strategy for the Yolo Bypass [ERP-98-E11]                      | Yolo Basin Foundation                            | Develop a local implementation strategy for environmental restoration in the Yolo Bypass.  | \$244,188             | Contract signed Jun-99. Watershed work group is meeting regularly.    |
| Lower Putah Creek Watershed Stewardship Plan   | Solano County Dept. of Environmental Managemt.   | Develop a community-based watershed plan for lower Putah Creek.  | \$100,500             | Contract signed Mar-00. Project underway.                             |
| Lower Mokelumne River Watershed Stewardship Plan [ERP-98-E12]                        | San Joaquin County RCD                           | Develop a community-based watershed plan for the lower Mokelumne River.  | \$159,000             | Contract signed Apr-99. Issues & Opportunities paper completed.       |
| Traveling Film Festival  | Independent Documentary Group                    | Package and distribute a six-film Traveling Festival about Bay and Delta habitats, wildlife, and restoration.  | \$54,000              | <u>Project is complete.</u>   |
| Discover the Flyway [ERP-98-B34]   | Yolo Basin Foundation                            | Two-year program to expand curriculum and activities for middle school and high school students, and expand trips and training sessions for the general public.                            | \$49,000              | <u>Project is complete.</u>   |
| Bay-Delta Environmental Restoration Education Program                                | Water Education Foundation                       | Provide outreach to increase understanding of Bay-Delta watershed ecology.   | \$40,000              | <u>Project is complete.</u>   |
| Water Challenge 2010   | S.F. Bay Model Visitor Center Corps of Engineers | Traveling exhibit would allow visitors to manage Delta water for ecosystem restoration and other beneficial uses. Design phase funded.   | \$64,500              | <u>Project is complete.</u>   |
| Developing a Methodology to Accurately Simulate the Entrainment of Fish [ERP-98-C16] | CDFG   | Purchase or lease a barge, mount a pipe, pump, and flume to hold a sampling net on board the barge, and conduct sampling of one of DWR's agricultural diversion siphons on Sherman Island. | \$200,000             | Contract signed Dec-99. Bids received for pump and water combination. |

**CALFED – February 1999 (Designated Actions)**

| <u>TITLE</u>   | <u>APPLICANT(S)</u>  | <u>DESCRIPTION</u>  | <u>FUNDING</u> | <u>STATUS</u>  |
|--|--|---|----------------|--|
| Prospect Island Monitoring Project   | DWR  | Establish a baseline to be used as a guide for development and implementation of future projects. Information would also be used for adaptive management.                             | \$915,000      | Contract being drafted. <b>No update available; project is on hold (see pg. 1). (9/03)</b> |
| Cosumnes River Feasibility Study [ERP-99-C01] and Mokelumne River Feasibility Study [ERP-99-C02] | Corps of Engineers<br>The Nature Conservancy<br>East Bay MUD | Study will identify, design, and estimate costs for environmental restoration and flood damage reduction opportunities along the Cosumnes River.                                      | \$1,007,800    | Working with Corps to refine Project Study Plan.   |
| McCormack-Williamson Tract Acquisition   | The Nature Conservancy                                       | Acquire McCormack-Williamson Tract.   | \$5,356,000    | <u>Project complete.</u><br>Property acquired Sept-99.                                     |
| Restore Habitat on McCormack-Williamson Levees   | The Nature Conservancy                                       | Monitor riparian vegetation, wildlife, avian, and fish resources.   | \$860,000      | Contract signed Aug-00.<br>Project underway.   |
| Assessment of Ecological and Human Health Impacts of Mercury in the Bay-Delta Watershed          | CSU San Jose   | Studies will be undertaken to better understand information that will lead to the reduction of mercury in resident fish tissues to levels that are not harmful to humans or wildlife. | \$4,164,000    | Contract signed Sept-99.<br>Amendment for \$364,000 approved 5/00.                         |



### CALFED – April 1999 Solicitation

| <u>TITLE</u>  | <u>APPLICANT(S)</u>   | <u>DESCRIPTION</u>   | <u>FUNDING</u> | <u>STATUS</u>                             |
|---|---|--|----------------|---|
| Develop Fish Screen Criteria for Native Sacramento-San Joaquin Watershed Fishes (Fish Treadmill Project)                      | U.C. Davis Hydraulics Lab   | Evaluate performance and behavior of small Delta and upstream fishes in multi-vector flows near fish screens. Develop fish screen design, flow, and operational criteria that reduce impacts of diversions on these species.   | \$847,690      | Contract signed Jan-00. Project underway. |
| East Delta Habitat Corridor (Georgiana Slough)  | Habitat Assessmt. & Restoration Team, Inc.                        | Builds upon previously-funded project (Tyler [pg. 3]). Improve habitat conditions along 14 miles of Georgiana Slough. (Enhance existing berms, restore and enhance tidal freshwater marsh, remove exotic vegetation from berms and replace with native species, expand monitoring program).                                      | \$1,133,000    | <u>Project complete.</u>                  |
| Cosumnes-Mokelumne Paired Basin Studies (Linked Hydrogeomorphic Ecosystem Models to Support Adaptive Management) [ERP-99-N06] | U.C. Davis Center For Integrated Watershed Science And Management | Develop a demonstration monitoring and assessment program for the Cosumnes and Mokelumne Rivers. Three-year study of five core areas: hydrology, geomorphology, water quality, aquatic resources, and data analysis/dissemination. Baseline info would be used to test and validate models guiding long-term monitoring program. | \$1,546,016    | Contract signed Jan-00. Project underway. |
| Chronic Toxicity of Environmental Contaminants in Sacramento Splittail: A Biomarker Approach                                  | U.C. Davis Dept. Of Animal Science                                | Measure four biological indicators (contaminant exposure, general condition indices, organ & reproductive dysfunction, and individual-level response) to evaluate the chronic effects of contaminants (mercury, selenium, diazinon, organochlorine pesticides) on the health of splittail.                                       | \$693,895      | Contract signed Jan-00. Project underway. |

**CALFED – April 1999 Solicitation, cont.**

| <u><b>TITLE</b></u>   | <u><b>APPLICANT(S)</b></u>                       | <u><b>DESCRIPTION</b></u>  | <u><b>FUNDING</b></u> | <u><b>STATUS</b></u>  |
|---|--|--|-----------------------|---|
| Dissolved Organic Carbon (DOC) Release from Delta Wetlands, Part I [ERP-99-B17]                                   | U.S. Geological Survey                           | Study will characterize the concentration of DOC released from different wetland types within the Delta and by agricultural activity. Data will address incorporation of organic carbon into Delta food web as well as health concerns associated with drinking water quality.                           | \$1,434,449           | Contract signed Aug-00. Project underway.   |
| Evaluation of the Potential Impacts of the Chinese Mitten Crab on the Benthic Community in the Delta [ERP-99-B18] | DWR  | Evaluate how the downstream migration of adult mitten crabs impacts the food webs of the Delta and northern estuary.   | \$152,233             | Contract signed Dec-99. Project underway.   |
| Purple Loosestrife Prevention, Detection, and Control Action for the Delta  | CA Dept. of Food and Agriculture                 | Three-year project would detect and eradicate the small but spreading purple loosestrife infestations in the Delta and nearby hydrologic units. (Part of this project [\$201,306] was funded as a Nonnative Invasive Species Designated Action in July 1999; the remainder of the cost is covered here.) | \$127,473             | Contract signed Oct-99. Project underway.   |
| Water Challenge 2010 Exhibit  | Corps of Engineers S.F. Bay Model Visitor Center | Construction and installation of hands-on exhibit allowing users to apportion water from one large tank into three smaller tanks (representing the needs of agriculture, cities, and the environment).   | \$52,015              | Contract signed Dec-99. Project underway.   |
| Traveling Film Festival Exhibit   | Independent Documentary Group                    | Expand film exhibit in the Bay Area, as well as into Sacramento and other locales in the Central Valley and North Delta.   | \$51,500              | Contract signed Dec-99. Project underway.   |
| Assessment of Pesticide Effects on Fish and Their Food Resources in the Delta                                     | U.C. Berkeley                                    | Three-year laboratory and field study to provide info on pesticide toxicity to resident species. Results would be put into an ecological context focusing on juvenile chinook and their prey.  | \$1,586,894           | Scope approved; waiting for invoicing resolution. Contract amendment for \$119,776 approved Feb-01. Project underway. |
| Determination of the Causes of Dissolved Oxygen Depletion in the San Joaquin River                                | DWR  | Develop database on source loads of oxygen-depleting substances, collect additional field data, and fill data gaps in existing models. Develop a management plan to eliminate dissolved oxygen depletion in the lower San Joaquin River during the fall. This is a three-year study.                     | \$892,400             | Contract signed May-00. Project underway.   |

### CALFED – July 1999 (Designated Actions)

| <u>TITLE</u>   | <u>APPLICANT(S)</u>              | <u>DESCRIPTION</u>  | <u>FUNDING</u> | <u>STATUS</u>   |
|--|----------------------------------|---|----------------|---|
| Inundation of a Section of the Yolo Bypass to Restore Sacramento Splittail and Other Native Species [ERP-99-A01]     | Natural Heritage Institute       | First phase (baseline monitoring, alternatives analysis, and design) funded. Pilot project will inundate a portion of the Yolo Bypass, on about 5,000 acres along its eastern edge.   | \$912,309      | Contract signed Sept-99. Project underway.  |
| Nonnative Invasive Species (NIS) Advisory Council  | USFWS                            | Establish a NIS Advisory Council to monitor and coordinate the efforts of the NIS program, and address issues requiring the commitment of agencies with existing NIS responsibilities.  | \$50,000       | Draft MOU under review.<br><b>New Draft MOU for CBDA under review; not part of this grant. (9/03)</b> |
| Reducing the Risk of Importation and Distribution of Nonnative Invasive Species (NIS) Through Outreach and Education | U.C. Davis                       | Prevent future introductions by educating industries and representatives of adverse impacts of releasing NIS into the environment. Outreach will be through a series of workshops, public service announcements, and development of a video, brochure, and a NIS website. | \$105,466      | Contract signed May-00. Project underway.   |
| Zebra Mussel Detection and Outreach Program  | DWR                              | Three-year project would educate the public about zebra mussels, and establish and operate an early detection system in the Central Valley, Bay-Delta, and water storage/delivery systems.  | \$100,000      | Contract being drafted.   |
| Purple Loosestrife Prevention, Detection, and Control in the Delta and Associated Hydrologic Units                   | CA Dept. of Food and Agriculture | Three-year project would detect and eradicate the small but spreading purple loosestrife infestations in the Delta and nearby hydrologic units.   | \$201,306      | Brochure complete, GIS map complete, presentations and training ongoing.                              |
| Guidebook to Prevent and Control Nonnative Invasive Plants in Shallow Water Habitats of the Bay-Delta                | San Francisco Estuary Institute  | Guidebook would provide information for local control of the highest priority species of non-native plants in shallow water habitats.   | \$76,750       | Contract being drafted. Scope of services being prepared.   |
| Effects of Introduced Clams on the Food Supply of Bay-Delta Fisheries  | CSU San Francisco                | Study how the introduced Asian clam has altered the feeding environments of native fish. Provide a detailed description of the status of the food web and likely impediments to rehabilitation.   | \$100,490      | Contract signed May-00.<br><b>One-year time extension granted in 9-03.</b>                            |

**CALFED – November 1999 (FY 2000 projects chosen from proposals submitted in the Apr-99 solicitation)**

| <b><u>TITLE</u></b>   | <b><u>APPLICANT(S)</u></b> | <b><u>DESCRIPTION</u></b>  | <b><u>FUNDING</u></b> | <b><u>STATUS</u></b>    |
|---|----------------------------|--|-----------------------|-------------------------|
| Canal Ranch Habitat Restoration, Phase II                                 | CDFG                       | Ground truthing of Conceptual Habitat Mgt. Plan (June 1996) with survey data from Phase I. Incorporate results into Feasibility Level HMP, to include restoration of native vegetation, development of seasonal wetlands, and provision of public hunting and educational opportunities. | \$135,940             | Contract signed Jul-00. |
| Culture of Delta Smelt, Phases II and III (see pg. 4) [ERP-00-B03]        | U.C. Davis                 | Spawning and rearing of larval smelt, using culture system developed during Phase I. Evaluate parameters of temperature and rearing-tank size on smelt performance.  | \$576,229             | Contract being drafted. |
| Liberty Island Acquisition and Restoration, Phase I (see pg. 3)           | USFWS                      | Purchase the two remaining privately-owned properties on Liberty Island (181+268 acres), conduct restoration planning for Liberty Island, implement restoration and monitoring plans.  | \$2,623,043           | Contract signed Jul-00. |
| McCormack-Williamson Tract Phase II Restoration Planning                  | DWR                        | Design and environmental documentation for McCormack-Williamson Tract restoration project.   | \$365,650             | Contract signed Jul-00. |
| McCormack-Williamson Tract Phase II Monitoring Program (see above)        | U.C. Davis                 | Conduct historic research and baseline studies necessary for restoration planning and development of monitoring program for project.   | \$572,886             | Contract signed Jul-00. |
| Dissolved Organic Carbon Release from Delta Wetlands, Part II (see pg. 8) | U.S. Geological Survey     | Part I focused on quality of organic carbon (OC) released from wetlands. Part II will examine amounts of OC released from wetlands and ag operations; include management strategy to limit introduction of OC into Delta channels.   | \$1,030,000           | Contract signed Aug-00. |
| Biological Assessment of Green Sturgeon, Phase II (see pg. 6)             | U.C. Davis                 | Continuation of previously-funded study to obtain baseline information on green sturgeons' biological requirements in the watershed.   | \$205,013             | Contract being drafted. |

**CALFED – April 2000 Solicitation (approved in January 2001)**

| <b><u>TITLE</u></b>  | <b><u>APPLICANT(S)</u></b>          | <b><u>DESCRIPTION</u></b>  | <b><u>FUNDING</u></b> | <b><u>STATUS</u></b>   |
|--|-------------------------------------|--|-----------------------|--|
| Staten Island Acquisition  | The Nature Conservancy              | Acquire 9,200-acre Staten Island.  | \$35,110,873          | <u>Project is complete.</u><br>Property acquired in 2001.  |
| Cosumnes-Mokelumne Corridor Floodplain Acquisitions, Management, and Restoration Planning (Phase I: Start-up Stewardship, Baseline Monitoring, and Initial Planning) | The Nature Conservancy              | Acquisition of fee and easement interest in one or more properties in the Cosumnes and Mokelumne floodplains, totaling approximately 600 acres, to be incorporated into the non-structural flood management practices of the Cosumnes River Preserve.  | \$3,044,342           | Contract being drafted.  |
| Demonstration Project for the Protection and Enhancement of In-Channel Islands (Phase II: Construction and Monitoring) (see pg. 3)                                   | Association of Bay Area Governments | Complete ongoing pilot project to demonstrate biotechnical erosion control methods to protect Delta in-channel islands from further erosion and facilitate sediment accretion around island perimeters. Three demonstration sites, two in-channel islands surrounding Webb Tract and Little Tinsley Island south of Empire Tract, will be constructed. | \$928,150             | <b><u>Project is complete.</u></b><br><b>Monitoring ongoing; first monitoring report available (9/03).</b> |
| Fay Island Restoration Project (Phase I: Acquisition)  | CDFG                                | Acquisition, restoration feasibility studies, and development of a restoration plan for 98-acre Fay Island and adjacent 17-acre in-channel island.   | \$744,148             | <b><u>Project has been terminated.</u></b><br><b>(9/03)</b>  |
| Feasibility Study: Ecosystem and Water Quality Benefits Associated with Restoration of Franks Tract, Big Break, and Lower Sherman Lake Levees                        | DWR                                 | Evaluate the potential of creating ecosystem, water quality and supply, recreation, and other benefits by modifying remnant levees to inhibit salt trapping and restoring tidal marsh habitat. Gather data and define a baseline, develop and calibrate a model, evaluate alternative restoration concepts, and prepare a feasibility study report.    | \$1,218,105           | Contract being drafted.  |
| Yolo Bypass Management Strategy, Phase II (see pg. 6)  | Yolo Basin Foundation               | Continue Yolo Bypass Working Group meetings and analyze the issue of fair market compensation for potential ecological enhancement land use changes in the Bypass.   | \$210,000             | Contract being drafted. <b>Work group meeting regularly (9/03)</b>   |

**CALFED – April 2000 Solicitation (approved in January 2001), cont.**

| <b><u>TITLE</u></b>  | <b><u>APPLICANT(S)</u></b>  | <b><u>DESCRIPTION</u></b>  | <b><u>FUNDING</u></b> | <b><u>STATUS</u></b>    |
|--|---|--|-----------------------|-------------------------|
| Influence of Flood Regimes, Vegetative, and Geomorphic Structures on the Links Between Aquatic and Terrestrial Systems (see pg. 8: Cosumnes-Mokelumne Paired Basin Studies) [ERP-99-B18] | U.C. Davis Center for Integrated Watershed Science and Management | Augmentation of “Paired Basin Studies”, which has yielded a program incorporating geology, hydrology, water quality, and wildlife biology into the study of linkages between river systems and aquatic ecology. This grant would bring in researchers from other disciplines (food web ecology, avian ecology, and riparian vegetation) to improve understanding of linkages.  | \$2,521,236           | Contract being drafted. |
| Food Resources for Zooplankton in the Delta [ERP-01-N50]   | U.C. Davis  | Assess the quantity and quality of food resources for copepods in various habitats of the Delta. Provide information and make recommendations about how different habitats support zooplankton and maximize energy transfer to fish through field sampling and lab and field experiments. Sampling sites include Sacramento River at Rio Vista, San Joaquin River at Twitchell, Mildred Island, Paradise Cut, Yolo Bypass, and Cosumnes River floodplains. | \$576,422             | Contract being drafted. |
| Juvenile Salmon Migratory Behavior in the North, Central, and South Delta [ERP-01-N48]   | Natural Resource Scientists, Inc.                                 | Conduct an investigation on juvenile salmon migratory behavior in the North, Central, and South Delta. Juvenile chinook would be fitted with radio transmitters, released at specific Delta locations, and monitored to determine individual behavior patterns.  | \$210,000             | Contract being drafted. |
| Use of the Delta for Rearing by Central Valley Chinook Salmon  | CDFG  | Conduct research targeting the role of the Delta in chinook salmon life history. Identify how salmon use the Delta, the Delta’s relationship to conditions in natal upstream areas, and the relative success of salmon compared to how they use the Delta under varying conditions.  | \$518,777             | Contract being drafted. |
| Transport, Transformation, and Effects of Selenium and Carbon in the Delta: Implications for Ecosystem Restoration (see pg. 4)   | USGS  | Study selenium and carbon cycle in the Delta, incorporating use of the hydronamic model developed under previous grant. Determine how transport and transformation of selenium will affect Delta food webs.  | \$641,362             | Contract being drafted. |

**CALFED – April 2000 Solicitation (approved in January 2001), cont.**

| <b><u>TITLE</u></b>  | <b><u>APPLICANT(S)</u></b>                  | <b><u>DESCRIPTION</u></b>   | <b><u>FUNDING</u></b> | <b><u>STATUS</u></b>    |
|--|---|---|-----------------------|-------------------------|
| Biological Assessment of Green Sturgeon in the Sacramento-San Joaquin Watershed, Phase III (see pgs. 5 and 11) | U.C. Davis                                  | Continuation of previous studies. Determine: green sturgeon environmental tolerance limits, behavioral tendencies, and stress responses; reproductive characteristics and temperature influence on development; genetic techniques to distinguish green sturgeon from white sturgeon at early life stages; and movement in the Delta. | \$641,362             | Contract being drafted. |
| Sedimentation in the Delta and Suisun Bay, Phase II (see pg. 3)  | USGS  | Continuation or previous study. Differentiate sedimentation between dry and normal years, document sediment-transport effects of restoration activities, test geomorphic hypotheses, and improve conceptual model of Delta sedimentation.   | \$1,367,684           | Contract being drafted. |
| Watershed Stewardship in Marsh Creek (Brentwood/Oakley area) [ERP-01-N32]                                      | Natural Heritage Institute                  | Organize a community-based watershed group for Marsh Creek. Collect baseline data and generate a watershed map; establish community-based watershed monitoring program.   | \$126,000             | Contract being drafted. |
| Kirker Creek Watershed CRMP Program (Eastern Pittsburg area)   | Contra Costa Resource Conservation District | Facilitate, coordinate, and support efforts of landowners, municipalities, community organizations, and industries of the watershed to develop and write a management plan, using the Coordinated Resource Management and Planning (CRMP) process.  | \$198,450             | Contract being drafted. |
| Discover the Flyway II (see pg. 6)   | Yolo Basin Foundation                       | Expand teacher training opportunities and provide additional educational programs for volunteers and the general public.  | \$197,987             | Contract being drafted. |
| Bay-Delta Learning Initiative  | Water Education Foundation                  | Produce and distribute Non-native Invasive Species posters to boaters and anglers; expand Journalist Tour and Bay-Delta Briefing; and provide curriculum materials to K-12 <sup>th</sup> teachers.  | \$126,668             | Contract being drafted. |
| Adopt-A-Watershed Leadership Institute   | Adopt-A-Watershed                           | Send ten new leadership teams to the Leadership Institute each year for three years. One of the teams participating during the first year is the San Joaquin County Office of Education in Stockton.  | \$592,884             | Contract being drafted. |
| Delta Studies Program: San Joaquin County Schools [ERP-01-N38]   | San Joaquin County Office of Education      | Implement a Delta Studies Program, focusing on aquatic and terrestrial habitats and ecological functions of the Delta.  | \$306,291             | Contract being drafted. |

**CALFED – 2002 Solicitation (approved in June 2002)**

| <b><u>TITLE</u></b>  | <b><u>APPLICANT(S)</u></b>                | <b><u>DESCRIPTION</u></b>   | <b><u>FUNDING</u></b> | <b><u>STATUS</u></b>    |
|--|---|---|-----------------------|-------------------------|
| Transport, Cycling, and Fate of Monomethyl Mercury in the Delta and Tributaries: an Integrated Mass Balance Approach       | CDFG                                      | Continue scientific research to understand the transport, cycling, and fate of environmental mercury and monomethyl mercury, using a biogeochemical mass-balance framework, as part of the CALFED Mercury Research Project.   | \$3,881,215           | Contract being drafted. |
| Staten Island Wildlife-Friendly Farming Demonstration (see pg. 11)   | Ducks Unlimited, Inc.                     | Establish a pilot program to support and improve wildlife-friendly agriculture for at-risk species such as the greater sandhill crane, and to investigate the effects of different agricultural practices on wildlife populations and water quality. Construct low interior cross levees and a high volume discharge pump to improve water management on Staten Island. | \$1,507,459           | Contract being drafted. |
| Sustainable Restoration Technologies for Bay/Delta Tidal Marsh and Riparian Habitat  | Habitat Assessmt. & Restoration Team, Inc | Build upon earlier work on the North Fork Mokelumne River and Georgiana Slough. Bank protection work, creation of riparian, shaded riverine aquatic, and tidal marsh habitat.   | \$1,800,000           | Contract being drafted. |
| Life History of Egeria Densa in the Delta: Factors Controlling Production & Fragment Availability                          | Portland State University                 | Study the life history of Egeria densa, to investigate control measures and better understand the implications of these measures on Egeria densa as well as other aquatic plant species.  | \$327,937             | Contract being drafted. |
| Determining the Mechanisms Relating Freshwater Flow and Abundance of Estuarine Biota (the “Fish-X2” Relationships: Phase I | San Francisco State University            | Design and plan a coordinated interdisciplinary research project of fish-X2 relationships and conduct modeling studies to guide future field research.  | \$509,222             | Contract being drafted. |
| Restoring Ecosystem Integrity in the Northwest Delta: Phase II (see Jepson Prairie Preserve Restoration, pg. 2)            | Solano Land Trust                         | Restore vernal pools on Wilcox Ranch in Solano County, and conduct an outreach program to strengthen management partnerships in the Jepson Prairie-Prospect Island corridor, including work with agricultural interests.  | \$246,370             | Contract being drafted. |
| Shallow Open Water Habitats: Hydrodynamics and Benthic Grazing   | Stanford University                       | Develop a detailed view of how tides and wind-generated waves determine the physical structure and hydrodynamics of shallow estuarine waters, and how these processes can act to constrain net primary production through their effects on grazing and light.   | \$471,661             | Contract being drafted. |



**CBDA – 2002 Solicitation (approved in June 2002), cont.**

| <b><u>TITLE</u></b>   | <b><u>APPLICANT(S)</u></b>                         | <b><u>DESCRIPTION</u></b>  | <b><u>FUNDING</u></b> | <b><u>STATUS</u></b>    |
|---|--|--|-----------------------|-------------------------|
| McCormack-Williamson Tract Restoration: Wildlife-Friendly Levee Management (see pgs 6 and 10.)  | The Nature Conservancy                             | Protect McCormack-Williamson Tract levees from interior wave erosion, and create riparian habitat, by resloping interior levees and planting native vegetation.  | \$2,476,835           | Contract being drafted. |
| Delta Smelt Culture and Research Program (see pgs 3 and 10.)  | U.C. Davis   | Build upon work under the Delta Smelt Culture Project to provide smelt for fish screen studies and research basic smelt biology and life history.  | \$400,000             | Contract being drafted. |
| Primary Production in the Delta: Monitoring Design, Data Analysis, and Forecasting  | U.C. Davis   | Build upon existing data and research to improve monitoring of phytoplankton production and related water quality variables in the Delta.  | \$359,201             | Contract being drafted. |
| Selenium Effects on Health and Reproduction of White Sturgeon in the Delta  | U.C. Davis   | Research the key areas of uncertainty about the toxic effects of selenium accumulation in white sturgeon, and how elevated selenium levels may affect the species' health and reproduction.  | \$199,732             | Contract being drafted. |
| Reducing the Introduction and Damage of Aquatic Nonindigenous Species Through Outreach and Education, Phase 2                                 | U.C. Davis Dept. of Environmental Science & Policy | Use workshops, industry magazine ads and articles, BMP manuals, a video, and enhancement of an existing website to educate the general public, as well as industries that sell or distribute exotic species, about the potential impacts of those species' introduction. | \$179,783             | Contract being drafted. |
| Evaluation of Mercury Transformations and Trophic Transfer in the Delta: Identifying Critical Processes for the Ecosystem Restoration Program | USGS   | Examine processes that affect the biogeochemical transformations and transfers of mercury among physical (sediment and water) and biotic (food web) compartments at Franks Tract and the Cosumnes River.   | \$2,262,567           | Contract being drafted. |
| Investigating in situ Low Density Chemical Dosing to Decrease Delta waters' DOC Concentrations and DBP Precursors                             | USGS   | Use low intensity chemical dosing of coagulants to remove dissolved organic carbon and disinfection byproduct precursors from Delta island drainage water.   | \$767,135             | Contract being drafted. |
| Pyrethroid Insecticides: Analysis, Occurrence, and Fate in the Delta  | USGS   | Develop analytical methods to measure pyrethroid insecticides occurrence and fate in water, colloids, sediments, and biota.  | \$800,000             | Contract being drafted. |
| Tiered Public Outreach Program  | Water Education Foundation                         | Update the PBS special "To Quench a Thirst" and the Delta Water Map, conduct tours for journalists of the Delta, and continue provision of a water-related curriculum to train teachers.   | \$360,000             | Contract being drafted. |

**CBDA – 2002 Solicitation (approved in June 2002), cont.**

| <b><u>TITLE</u></b>  | <b><u>APPLICANT(S)</u></b>  | <b><u>DESCRIPTION</u></b>   | <b><u>FUNDING</u></b> | <b><u>STATUS</u></b>    |
|--|-----------------------------|---|-----------------------|-------------------------|
| Geomorphic and Geologic Mapping for Restoration Planning, Delta Region | William Lettis & Associates | Produce GIS maps of the Delta and eastern tributaries, integrating interpretation of early historical records with established geomorphic and geologic mapping techniques to reconstruct pre-existing river system components and former floodplains. | \$120,000             | Contract being drafted. |

**CBDA – 2002 Solicitation (Directed Actions from 2002 solicitation; approved in August 2003)**

| <b><u>TITLE</u></b>   | <b><u>APPLICANT(S)</u></b> | <b><u>DESCRIPTION</u></b>  | <b><u>FUNDING</u></b> | <b><u>STATUS</u></b>  |
|---|----------------------------|--|-----------------------|---|
| Pacific Flyway Center Initial Planning                                | Yolo Basin Fdn.            | Fund site and program planning and development of a management plan for the creation of the Pacific Flyway Center, an educational center focused on Central Valley habitats and the Yolo Bypass.                                 | \$394,919             | Project approved at CBDA August 2003 meeting. Contract being drafted. |
| Big Break & Marsh Creek Water Quality and Habitat Restoration Program | Natural Heritage Institute | Restore tidal marsh, floodplain, and Antioch dune habitat on the delta of Marsh Creek in Contra Costa County.  | \$2,998,049           | Project approved at CBDA August 2003 meeting. Contract being drafted. |
| Restoring Ecosystem Integrity in the Northwest Delta; Phase II        | Solano Land Trust          | Develop a plan to restore CDFG's Calhoun Cut property to tidal action (no restoration funded), and acquire easements on up to 1,100 acres, to continue grazing and introduce BMPs to protect and enhance riparian habitat areas. | \$1,563,506           | Project approved at CBDA August 2003 meeting. Contract being drafted. |